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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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09/453,518 12/03/99 HADA

S PM-265165

EXAMINER

IM22/0718

PILLSBURY MADISON SUTRO LLP
INTELLECTUAL PROPERTY GROUP
1100 NEW YORK AVENUE N W
NINTH FLOOR
WASHINGTON DC 20005-3918

Olsen, K	
ART UNIT	PAPER NUMBER

1744
DATE MAILED:

07/18/01

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.

09/453,518

Applicant(s)

HASEDA ET AL.

Examiner

Kaj Olsen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 May 2001.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3 and 5-14 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,3 and 5-14 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Claim Rejections - 35 USC § 103

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 1, 3, and 5-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over EP ('591) in view of EP ('423), and one of Taylor (4,457,808), Bryan (4,822,456), or Kida (5,989,624).

EP ('591) discloses a gas concentration sensor which is capable of measuring NO_x. Although EP ('591) does not disclose the use of a signal processing circuit within a connector in order to connect the signal processing circuit to an external device, EP ('423) teaches using a signal processing unit 104 which allows a gas sensor characteristics to be compensated (i.e. calibrated) for individual sensors (see abstract). It would have been obvious to one of ordinary skill in the art at the time the invention was being made to utilize the teaching of EP ('423) for the sensor of EP ('591) so that the sensor of EP ('591) can be compensated for variations in sensor performance. Said sensor would ensure accurate measurement even if the sensor was not suitably factory calibrated, or even if the sensor has degraded since original installation.

The references EP ('591) and EP ('423) do not teach the use of a microcomputer for the signal processing circuit. The reference teaches the use of analog circuitry. However, the use of microcomputers in place of conventional analog circuitry is well known. In particular, Kida teaches in an alternate exhaust gas sensor that voltage supplied to the one of the pump circuits can be provided by analog circuitry or a microcomputer (col. 7, line 58 and 59). Bryan teaches that although analog circuitry is known for the controlling of electrochemical sensors,

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microcomputers are a preferred means because they allow for the use of algorithms (col. 3, lines 1-5). Finally, Taylor teaches that it would have been within the purview of one possessing ordinary skill in the art to substitute digital computing for analog circuitry (col. 12, lines 54-59). It would have been obvious to one of ordinary skill in the art at the time the invention was being made to utilize the a microcomputer (as taught by Kida, Bryan, or Taylor) for the analog circuitry of EP ('423) because microcomputers provide greater control and adjustment than an analog circuit can. With respect to the remainder of the limitations, these were discussed with respect to the 103 rejections with the individual rejections with EP ('591) and EP ('423) (see previous office action).

Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over EP ('591) in view of EP ('423), and one of Taylor (4,457,808), Bryan (4,822,456), or Kida (5,989,624) as applied to claim 6 above and in further view of Miyata et al (6,214,207).

The reference set forth all the limitations but did not explicitly identify the use of a map for the controlling the cells. However, the use of maps for control of cells is well known in the art especially when the cells are microcomputer controlled. In particular, Miyata teaches that using maps as part of a sensor control operation are known (col. 23, lines 21-25 as an example). It would have been obvious to one of ordinary skill in the art at the time the invention was being made to utilize the teaching of Miyata for the sensor of the above references because maps allow control of the various computer controlled operations of the sensor.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kaj Olsen whose telephone number is (703) 305-0506. The examiner can normally be reached on Monday through Thursday from 8:00 AM-5:30 PM. The examiner can also be reached on alternate Fridays.

If attempts to reach the examiner are unsuccessful, the examiner's supervisor, Mr. Robert Warden, can be reached at (703) 308-2920.

When filing a fax in Group 1700, please indicate in the header "Official" for papers that are to be entered into the file, and "Unofficial" for draft documents and other communications with the PTO that are not for entry into the file of this application. This will expedite processing of your papers. The fax number for this Group is (703) 305-7719.

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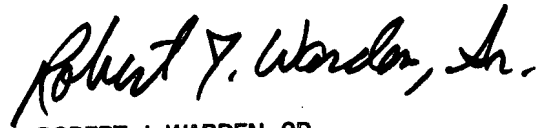
Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist, whose telephone number is (703) 308-0661.

Kaj K. Olsen, Ph.D.



Patent Examiner

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ROBERT J. WARDEN, SR.
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1700